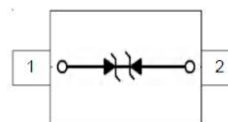
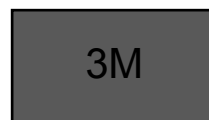


Features

105W(8x20us) Peak Pulse Power
Low Clamping Voltage
SOD-323 Package
RoHS Compliant
Matte Tin Lead finish (Pb-Free)
Protect One I/O or Power Line
Meet IEC61000-4-2 Level 4:Contact Discharge > 25kV ;
Air Discharge > 25kV



SOD-323

Application

Smart Phones
Laptop Computers
Portable Electronics

Absolute Maximum Rating

Parameter	Symbol	Limit	Unit
IEC 61000-4-2 ESD Voltage	$V_{ESD}^{(1)}$	±25	kV
Air Model			
Contact Model		±25	
JESD22-A114-B ESD Voltage		±16	
ESD Voltage	Machine Model	±0.4	
Peak Pulse Power	$P_{PP}^{(2)}$	105	W
Peak Pulse Current	$I_{PP}^{(2)}$	7	A
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260	°C
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55 ~ +150	°C

(1).Device stressed with ten non-repetitive ESD pulses.

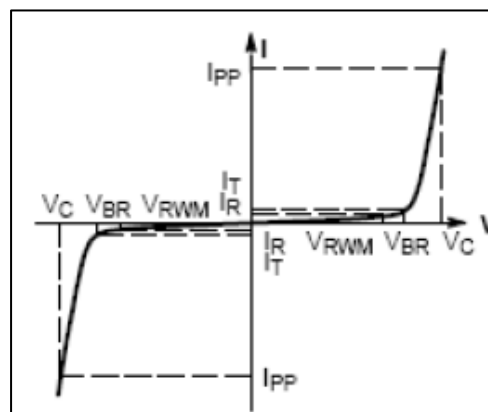
(2).Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5.

Electrical Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
VRWM	Reverse Working Peak Voltage				5.0	V
VBR	Reverse Breakdown Voltage	$I_T = 1\text{mA}$	6.0	7.0	8.5	V
IR	Reverse Leakage Current	$VRWM = 5.0\text{V}$			1	μA
VC1	Clamping Voltage	$I_{PP} = 1\text{A} (8/20\mu\text{s})$			8	V
VC2	Clamping Voltage	$I_{PP} = 7\text{A} (8/20\mu\text{s})$		11	15	V
Ipp	Peak Pulse Current	$t_p = 8/20\mu\text{s}$			7	A
CJ	Capacitance	$VR = 0\text{V}, f = 1\text{MHz}$		15	25	pF

Electronics Parameter

Symbol	Parameter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Reverse Standoff Voltage



V-I characteristics for a Bi-directional TVS

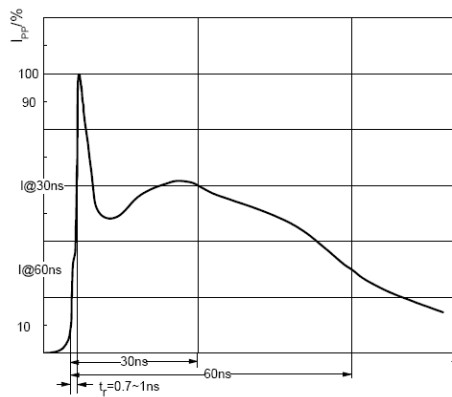
ESD standards compliance

IEC61000-4-2 Standard

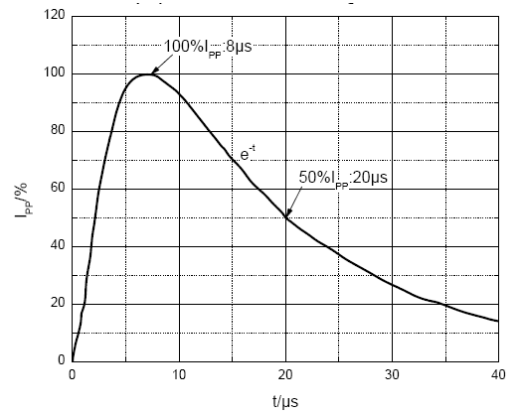
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

JESD22-A114-B Standard

ESD Class	Human Body Discharge V
0	0~249
1A	250~499
1B	500~999
1C	1000~1999
2	2000~3999
3A	4000~7999
3B	8000~15999

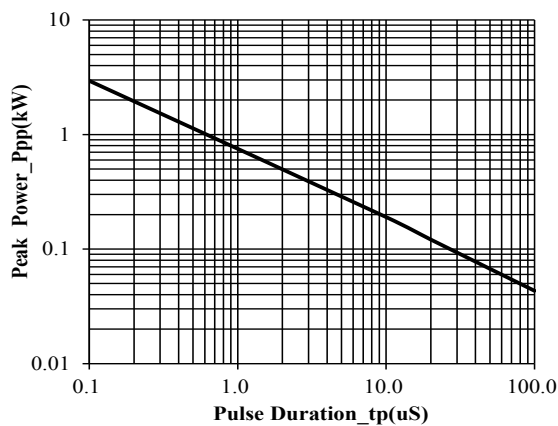


ESD pulse waveform according to IEC61000-4-2

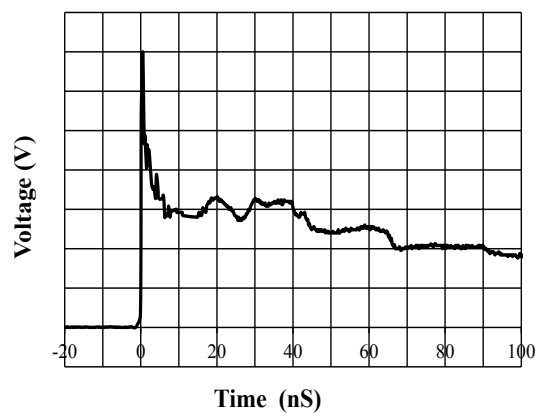


8/20 μ s pulse waveform according to IEC 61000-4-5

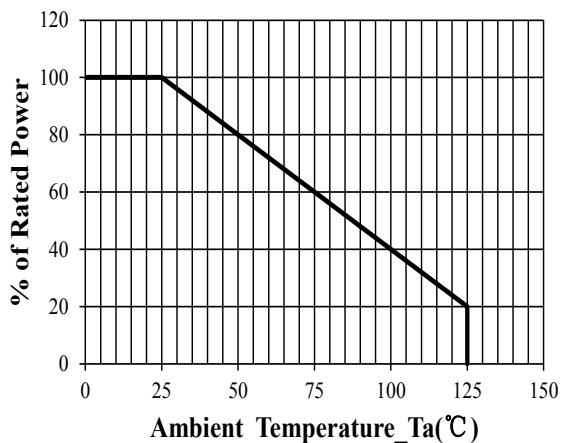
RATING AND CHARACTERISTIC CURVES



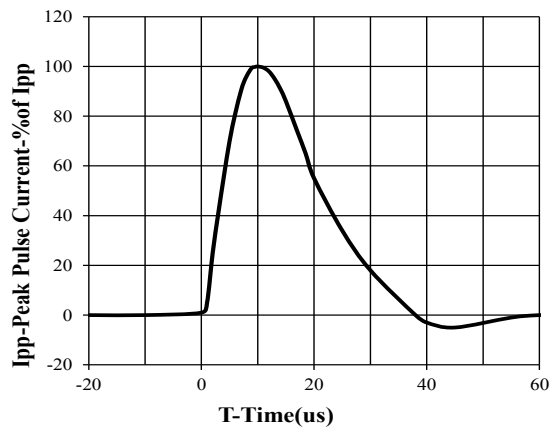
Peak Pulse Power vs. Pulse Time



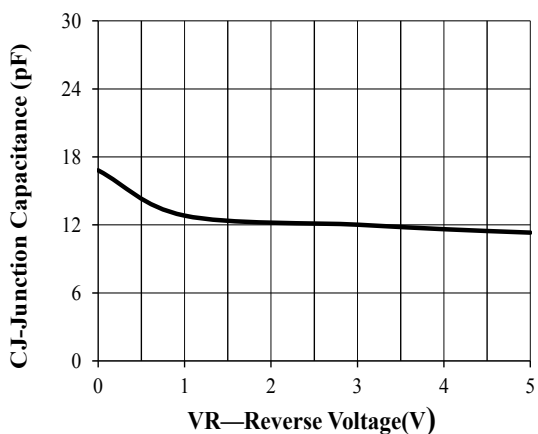
IEC61000-4-2 Pulse Waveform



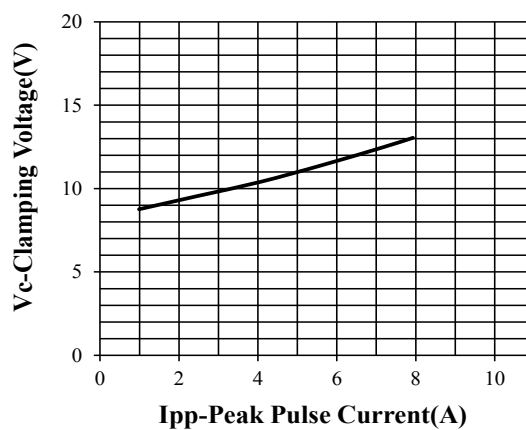
Power Derating Curve



8 X 20us Pulse Waveform



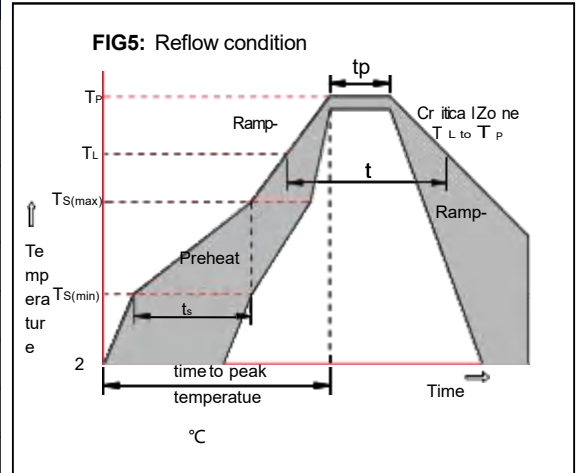
Junction Capacitance vs. Reverse Voltage



Clamping Voltage vs. Peak Pulse Current

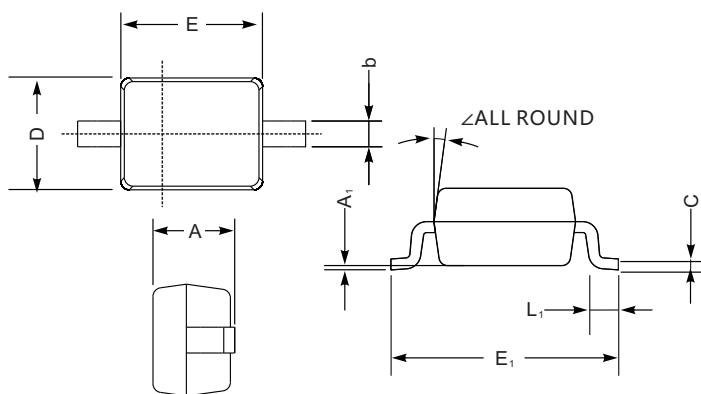
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C



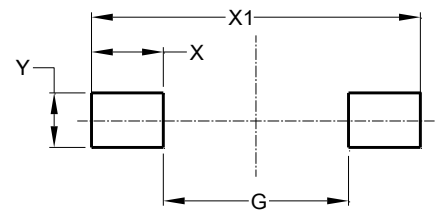
Package Dimensions & Suggested Pad Layout

SOD323



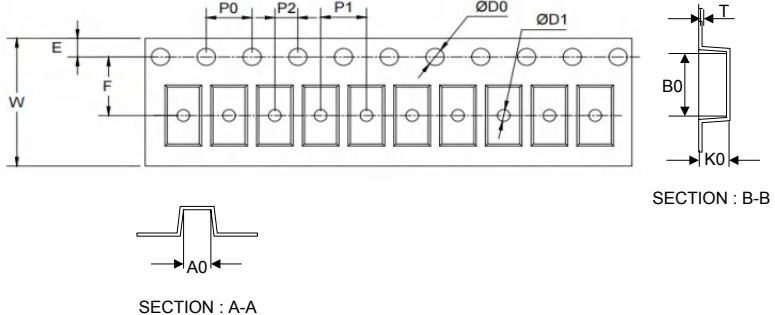
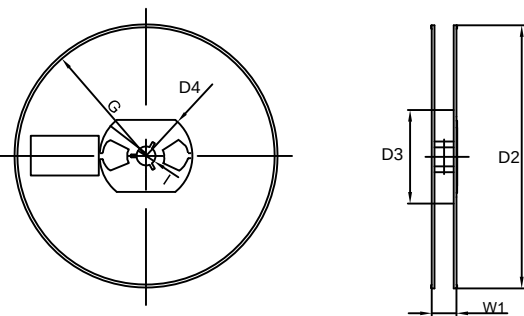
SOD-323 mechanical data

UNIT		A	C	D	E	E ₁	b	L ₁	A ₁	∠
mm	max	1.1	0.15	1.4	1.8	2.75	0.4	0.45	0.2	9°
	min	0.8	0.08	1.2	1.4	2.55	0.25	0.2	—	
mil	max	43	5.9	55	70	108	16	16	8	
	min	32	3.1	47	63	100	9.8	7.9	—	



Dimensions	Value (in mm)
G	1.40
X	1.20
X1	3.80
Y	1.00

Tape & reel specification

Tape		Symbol	Dimension (mm)
		P0	4.00±0.20
		P1	4.00±0.20
		P2	2.00±0.20
		D0	1.55±0.20
		D1	1.00±0.20
		E	1.55±0.25
		F	3.60±0.20
		W	8.00±0.20
		A0	2.00±0.20
		B0	3.25±0.20
		K0	1.35±0.20
		T	0.23±0.10
		D2	177.0±5.0
		D3	55Min.
		D4	R24.6±2.0
7" Reel		G	R82.0±2.0
		I	13.0±2.0
		W1	10.20±3.0
		Quantity: 3000PCS	